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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,620	02/04/2002	Alain Guy	01205	2960

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EXAMINER	
DRODGE, JOSEPH W	

ART UNIT	PAPER NUMBER
1723	

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/926,620	GUY ET AL.	
	Examiner	Art Unit	
	Joseph W. Drodge	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1101*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The disclosure is objected to because of the following informalities: Page 1 of the Specification needs reference to the 371 Application and its filing date inserted immediately below the Title.

Appropriate correction is required.

Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are replete with indefinite transitional phrases, including in claim 1 and dependent claims "preferably", "even more preferably", "and optionally", "especially", etc., it is unclear whether subject matter following these phrases are limitations. Various claims recite "appropriate" , the scope of limitations following "appropriate" is unclear.

Within independent composition claim 9, it is unclear whether simultaneous presence of all 3 recited monomers/compounds is required to anticipate the claim and whether the monomers/compounds are recited in the alternative or as a mixture or compound.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 9 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Sieving et al patent 6,274,713.

Sieving et al disclose plural DTPA type complexing agents comprising bis-amide containing formulations, which form chelates with lantanide type metals (see especially column 13, lines 52-54, column 15, lines 28-47). The compositions are used for rare earth formulation processing (column 16, lines 14-17) and are capable of being used for processing of nuclear waste (column 1, lines 18-19) as in claim 9.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3 and 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al patent 5,766,478 in view of Green patent 5,476,591.

Smith et al disclose separation of lanthanides and actinides from each other (column 2, lines 58-65) in aqueous solutions (column 7, line 62-column 8, line 11), separation being effected by complexing of the rare earth metals with ligand mixtures including EDTA and then passing the complexed metals containing solution through ultrafiltration membranes to selectively remove lanthanides and actinides (see examples 6 and 10, column 36, line 43-column 37, line 37) and (column 38, line 57-column 40, line 16). The separated complexes are recovered by methods including contacting with decomplexing agents in the form of competing molecular ligands, acids and bi-phasic back extraction phases (column 8, lines 37-44; column 13, lines 28-35 and column 14, lines 40-65).

The claims differ in requiring use of nanofilters rather than ultrafilters as in Smith et al. However, Green teaches use of nanofilters to remove lanthanides and actinides from aqueous solutions (column 8, lines 34-53 and column 10, lines 5-29). It would have been obvious to one of ordinary skill in the art to have modified the Smith et al method by substituting nanofilters for the ultrafilters used as the separating membranes, as suggested by Green, since nanofilters have been demonstrated as permitting very high flux rates of lanthanide and actinide containing solutions at relatively low operating

pressures and can be selectively sized for removal of particular lanthanides and actinides.

Smith et al also teaches selective complexing at column 14, line 34 as in claim 2, use of set molecular weight thresholds at column 16, lines 21-23 as in claims 3 and 7, plural step processes at column 14, lines 47-65 as in claim 5, and pH control at column 13, lines 42-47.

Green further teaches various molecular weight separations at column 10, lines 10-15 as in claims 3 and 7 and controlled pH values at various acidic pH levels at column 24, lines 23-68.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al in view of Green as applied to claim 1 above, and further in view of Sieving et al patent 6,274,713.

Claim 4 further differs in requiring the complexing agent to be a DTPA type agent. Sieving et al suggest use of DTPA for complexing lanthanides and/or actinides from nuclear waste, particularly at column 1, lines 18-19), see also column 13, lines 52-54 and column 15, lines 28-47. It would have been further obvious to one of ordinary skill in the art to have modified the Smith et al process by using DTPA as a complexing agent, as suggested by Sieving et al, since DTPA has demonstrated excellent solubility and site specific selectivity.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sirkar et al patent 5,868,935 and Brierley et al patent 5,489,736 are also of interest with respect to selective removal of lanthanides and/or actinides

from aqueous streams containing mixed waste with various complexing agents, Brierley et al also teaching EDTA complexing agent.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can reached at 571-272-1151. The fax phone number for the examining group where this application is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

April 14, 2004

JOSEPH DRODGE
PRIMARY EXAMINER